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ABSTRACT

Based on the alternatives approach to drug abuse prevention, two service opportunity courses were offered to 8th and 9th grade students. Students in Cross-Age Tutoring were taught tutoring and communication skills and spent one period, 4 days per week tutoring elementary students. Students in School Store (a service opportunity developed for this study) were taught business and interpersonal skills and operated an on-campus store. Students who volunteered for either course were matched and one student from each pair was randomly assigned to receive the course while the other served as a control. All students were pre- and post-tested via a self reporting Student Questionnaire, observations and interviews, and most students participated in follow-up testing 1 year later. Affective and drug-specific measures were collected, with positive effects of the courses hypothesized for self-esteem, attitudes toward school, attendance, locus of control, and discipline problems. Results indicated negligible effects for either course, although students rated the courses favorably. Discussion of results is in terms of shortcomings of the courses themselves and limitations of the school-based model of alternatives to drug abuse and calls into question the efficacy of incorporating service opportunity prevention strategies within the school curriculum. (Author/PN)

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Evaluation of Two Alternatives Programs For Junior High School Students

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Abstract

Based on the alternatives approach to drug abuse prevention, two service opportunity courses were offered to 8th and 9th grade students. Students in Cross-Age Tutoring were taught tutoring and communication skills and spent one period, four days per week tutoring elementary students. Students in School Store were taught business and interpersonal skills and operated an on-campus store.

Students who volunteered for either course were matched and one student from each pair was randomly assigned to receive the course while the other served as a control. All students were pre- and posttested and most students participated in follow-up testing one year later.

Affective and drug-specific measures were collected, with positive effects of the courses hypothesized for self-esteem, attitudes toward school, attendance, locus of control, and discipline problems.

Results indicated negligible effects for either course although students rated the courses favorably. Discussion of results is in terms of shortcomings of the courses themselves and limitations of the school-based model of alternatives to drug abuse.

INTRODUCTION

Drug and alcohol abuse is often seen as a response to unfulfilled needs of the individual. According to this reasoning, chemically-induced highs are sought to relieve boredom, frustration or low self-esteem, and to satisfy needs for excitement, identity, or social belongingness. One corollary of this philosophy is that, provided non-chemical means for fulfilling needs, individuals would be less inclined to abuse substances.

"Alternatives" is an approach to substance abuse prevention that evolved from this philosophy. It calls for the development of opportunities for individuals to improve skills and pursue interests that can replace the need for drugs. A variety of experiences have been promoted as alternatives including personal growth activities, such as athletics, crafts, meditation; and interpersonal or service activities such as clubs, volunteer work or community projects.

Some of the activities that have been proposed as alternatives are designed to offer "natural highs," (e.g., meditation, yoga). Such experiences emphasize alteration of consciousness through non-drug means. Whereas these alternatives may satisfy immediate needs for pleasure, sensation, or relief, they will probably fail to compete with drug-induced highs. Therefore, it has been suggested that the alternatives concept be narrowed to reflect those activities that enable individuals to lead more productive lives. Specifically, alternatives should provide achievement goals, practical skills, and services

to others (Schaps and Slimmon, Note 1). They should also be pleasurable, but they must be involving, active, incompatible with intoxication, and must stimulate commitment (Schaps and Slimmon, Note 1). Such alternatives are called service opportunities.

In the present paper, we report the results of two evaluations of school-based service opportunity programs. Both programs were integrated into a junior high school curriculum as elective courses. The courses combined classroom learning with fieldwork in a service setting. In the Cross-Age Tutoring course, students were trained in tutoring and communication skills, and spent four days each week tutoring children at nearby elementary schools. Students in the School Store course were instructed in business and interpersonal skills, and operated a campus store. Students in both service opportunities were expected to benefit from their participation, relative to controls, by adopting more positive attitudes and behaviors with regard to themselves and school. Because such attitudes and behaviors are correlates of drug use any positive changes in them would be anticipated to ultimately reduce students' acceptance and use of psychoactive substances.

Cross-age tutoring was selected as a service opportunity because it potentially benefits the tutors, their tutees, and the teachers. Additionally, there is some empirical evidence for both cognitive and affective gains for cross-age tutors, although evaluations of cross-age tutoring programs have typically focussed on the improvements in the tutees. Summaries of the research literature have identified 20 studies that assessed the effects on tutors (Schaps and Slimmon, Note 1; Anania, Easton and Sugarman, Note 2; Fitz-Gibbon, Note 3). Achievement in a particular subject was monitored in

15 of these studies; 10 of which found positive effects on tutors. Four of 10 studies that measured self-concept found positive effects, and two of four studies that measured attitudes toward school found positive effects.

The prior research evidence suggested the hypotheses for the present evaluation of Cross-Age Tutoring. Students who participated as tutors were expected to have better social and academic self-esteem, better attitudes toward the teaching climate and school, better school attendance, more internal locus of control, and fewer discipline problems than controls. Various drug-related variables were also measured, although they were not expected to be directly influenced by the course.

School Store is a service opportunity that was developed for this study. It provided the participants a chance to serve their school "community" by establishing and maintaining an on-campus store. Because evaluations of similar projects could not be identified, the hypotheses under investigation originated from logical analysis of the course's potential. Participation in School Store was expected to produce positive effects on social self-esteem, attitudes toward school, school attendance, locus of control and discipline problems.

METHOD

Design

The research design for both studies was the same. Student volunteers were matched and randomly assigned to their preferred service opportunity course or to their other electives. This procedure maximized the likelihood of establishing equivalence between experimental and control conditions for the separate studies, but not between the studies.

The following procedures were employed in assigning students to condition:

a) The two courses, Cross-Age Tutoring and School Store, were described to all students in the appropriate grade levels during the spring prior to the studies;

b) Students were eligible for a course if they selected the course as their most preferred elective and obtained written parental permission for participation;[1]

c) Eligible students were matched into pairs on the basis of course selection (Cross-Age Tutoring or School Store), grade level, sex, and grade point average for the prior semester.

d) One student from each pair was randomly assigned to the experimental condition and the other to the control condition.[2]

For each study, comparisons between experimental students and control students were made at two points in time: a) in the Spring, after participation in the courses and, b) one year later. The first comparisons included examination of posttest differences controlling for pretest differences on corresponding

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[1]Students who also selected band or foreign language as an elective were considered ineligible for the studies due to the school's need to fill these other courses.

[2]Several experimental students could not be scheduled into their selected courses. These students and their matched controls were dropped from each study. This deletion of subjects did not appear to affect randomness.

measures. The sample for these analyses was all 8th and 9th grade students who participated in the courses and their controls.

The second comparisons were of differences on measures collected a year after the posttest measures, controlling for pretest differences on corresponding measures. This follow-up study included the original 8th grade students and their controls (those who were in the 9th grade at follow-up). For practical reasons, students who participated in the courses as 9th graders were not measured at follow-up as 10th graders.

Subjects

The initial sample of students cross-tabulated by course, grade, sex, and condition is shown in Table 1. The composition of the sample of students at posttest and at follow-up after attrition is shown in Table 2. The extent of attrition was similar across conditions at posttest (23%). At follow-up, attrition was similar across conditions for School Store (25%); whereas, for Cross-Age Tutoring, attrition was slightly higher in the control (48%) than in the experimental condition (33%). The ethnic composition of the sample was similar across conditions and was predominantly white (96%).

The number of semesters of Cross-Age Tutoring or School Store completed by the experimental students is presented in Table 3. Of the students assigned to Cross-Age Tutoring, many completed two semesters. However, most students assigned to School Store completed only one semester. For both courses, most experimental students were enrolled in the first semester.

Procedures

Cross-Age Tutoring. This course was taught by a faculty member from the science department who had a credential in remedial reading. The class met

TABLE 1

INITIAL DISTRIBUTION OF STUDENTS

	Cross-Age Tutoring				School Store			
Condition	grade 8 male	grade 8 female	grade 9 male	grade 9 female	grade 8 male	grade 8 female	grade 9 male	grade 9 female
Experimental	8	13	2	6	9	5	7	7
Control	8	13	2	6	9	5	7	7

TABLE 2

NUMBER OF STUDENTS AT POSTTEST (FOLLOW-UP)

	Cross-Age Tutoring				School Store			
Condition	grade 8 male	grade 8 female	grade 9 male	grade 9 female	grade 8 male	grade 8 female	grade 9 male	grade 9 female
Experimental	5 (3)	11 (11)	1	6	9 (8)	4 (3)	5	4
Control	7 (4)	8 (7)	1	6	9 (9)	3 (1)	5	4

TABLE 3

NUMBER OF SEMESTERS OF TREATMENT COMPLETED BY THE POSTTEST (FOLLOW-UP) SAMPLE

Number of Semesters Completed	Cross-Age Tutoring				School Store			
	grade 8 male	grade 8 female	grade 9 male	grade 9 female	grade 8 male	grade 8 female	grade 9 male	grade 9 female
0	0 (0)	1 (1)	0	1	0 (0)	0 (0)	0	0
1	2 (2)	5 (3)	1	5	9 (8)	4 (3)	5	3
2	3 (3)	5 (5)	0	0	0 (0)	0 (0)	0	1

daily for one period during the first twelve days of the semester to provide background and training to the tutors. The training covered

a) basic reading skills for elementary grades;

b) research on teaching and learning;

c) interpersonal skills and characteristics of a "good" tutor.

After completing the initial training, tutors began traveling under adult supervision to one of two elementary schools. At the schools, tutors worked with individual children or small groups of children for one classroom period four days each week. The average time spent tutoring was approximately 30 minutes per day.

One day each week, the students met with their teacher on the junior high campus to discuss their experiences. These sessions also included additional training in communication, problem-solving and reading skills. During these sessions, students updated journals documenting their tutoring experiences.

School Store. This course was taught by a faculty member from the business education department who had previous training in distributive education. In the course, students prepared for the initial opening and continued operation of a school store. The class met one period daily, and students operated the store three times daily for brief periods under adult supervision.

The course content was divided into three areas on the basis of related job functions

1) operations - salesperson, cashier, bookkeeper;

2) merchandising - stock clerk, inventory clerk, buyer; and

3) sales promotion - advertising clerk, display person, store decorator.

Self-paced learning modules covered the academic content relevant to each area.

The students were organized into three teams corresponding to the three areas of store operation. During class, students individually or in teams, completed the learning modules in their area, or they worked at their jobs. Once a week the entire class discussed plans for the store. Students changed teams once a month to enable them to learn all aspects of store operation.

Student survey. The pretest was conducted in Spring 1979, the posttest in Spring 1980, and the follow-up test in Spring 1981. Substitute teachers administered the questionnaires during two social studies class sessions. The Student Questionnaire and Self Observation Scales (pretest only) were administered during the first session, and the Drug and Alcohol Survey (DAS) was administered during the second session. Make-up sessions were held for students who were absent at the time of the original sessions.

Questionnaires were pre-labeled with student names on the cover sheet and student identification numbers on page one. The administrators stressed the confidentiality of the survey and for added emphasis, instructed students to remove their names from the DAS.

Measures

Process evaluation. Experimental students in both studies supplied written course evaluations at the end of the first semester. In addition, course instructors and some students from each class were interviewed, and students were observed periodically in class and in their field work. The observations and interviews are documented in two separate reports (Napa Project, Notes 4 and 5).

Self-reports. Pretest data were obtained from students with the Student Questionnaire (SQ). This instrument measures locus of control for success and for failure, academic self-esteem, attitudes toward school, and perceived peer attitudes toward school. Pretest data were also obtained with the Self Observation Scales (Stenner and Katzenmeyer, Note 6). This instrument measures the ways students perceive themselves and their relationships to their peers, their teachers and their school.

Drug-related pretest data were collected with the DAS. This instrument assesses the following variables for each of ten substances: lifetime and current use, attitudes toward use, intentions to use, perceptions of peers' attitudes toward drug use, and perceptions of the prevalence of peer use.[3] The DAS also measures general drug attitudes, drug knowledge, and the perceived benefits and costs of using alcohol, cigarettes, and "pills[4]."

The pretest data were combined into scales for data analysis (Moskowitz, et al., Notes 7 and 8). The scales were locus of control for success (Control Succ) and for failure (Control Fail), academic self-esteem (Acad Self), social self-esteem (Social Self), affective teaching climate (Affec Climate), attitudes toward school (Att Sch) and perceived peer attitudes toward school (Peer Att Sch). The drug-related scales included measures of drug attitudes (General Drug Att), drug knowledge (Knowledge), perceived benefits and costs of alcohol, marijuana, and pill use [Alc Benefits (Costs), Pot Benefits (Costs), Pill Benefits (Costs)],

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[3]The substances were alcohol, cigarettes, marijuana or hashish, inhalants, barbiturates or tranquilizers, ampheatmines or stimulants, cocaine, PCP, LSD or psychedelics, and heroin or morphine. "Street" names were provided for most substances. Current use was defined as "during the last four weeks." Intentions were defined as "during the next year."

[4]Operationalized as "pep pills, sleeping pills, uppers, downers, soapers."

attitudes toward "soft" and "hard" drug use (Soft Att, Hard Att),[5] perceived peer attitudes toward soft and hard drug use (Soft Peer Att, Hard Peer Att), and involvement in use for each of ten substances (Involve)[6]. The reliabilities (coefficient alpha) obtained were adequate and ranged from .61 to .96 for all scales (Md = .89) except drug knowledge (.40), where guessing probably reduced reliability.

Posttest data were obtained with the DAS and a revised version of the Student Questionnaire. The revised instrument included all items employed in the pretest scales. For some items the response format differed from the pretest; thus, the posttest scores were not comparable with the pretest scores. The locus of control for success scale contained five extra items and the failure scale contained three extra items.

Archival records. Student discipline records for four months in the Spring semesters of 1979, 1980, and 1981 were obtained from the deans. Two indices were constructed for each year of data: a) drug related problems (Drug Problems), including use, possession, or sale of tobacco, alcohol, marijuana and other drugs, and b) general behavior problems (Non-drug Problems), including all other types of student misbehavior.

The total number of unexcused absences for each school year was obtained from school district records and served as a measure of student attendance (Unex Abs). This type of absence occurs when a student fails to provide the school with a note from a parent or guardian indicating that the student was

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[5]Where "soft" substances included alcohol, cigarettes, and marijuana, and "hard" substances included the other remaining substances.

[6]The involvement scales consisted of items assessing current use, lifetime use, and intentions to use.

sick. Grade point average (GPA) was obtained from school records for each spring semester; in calculating GPA, academic grades from all courses were weighted equally, and this served as a measure of academic achievement.

Data Analysis

The analysis strategies for Cross-Age Tutoring and School Store were identical. The designs for both studies compared all experimental students with all control students. T-tests were employed in the analysis of pretest data for evidence of initial equivalence. Analyses of covariance were applied to the posttest measures with the corresponding pretest as the covariate. Due to lack of variance in most of the involvement measures, only three were analyzed; alcohol, cigarettes and marijuana.

Because the samples at follow-up were different from those at posttest, t-tests were conducted on the pretest data for these samples to investigate initial equivalence. Analyses of covariance were then applied to the follow-up measures with the corresponding pretest as the covariate. The Type I error rate for all analyses was set at .05.

Results

Cross-Age Tutoring

Course evaluations. Written feedback from participants in the first semester course is summarized in Table 4. Students rated Cross-Age Tutoring favorably compared to other electives and indicated that the course should continue to be offered. They also reported that they had learned a lot; that they enjoyed the practical experience; and that their activities were helpful to others. Most students disliked their weekly class meetings and described the meetings as irrelevant, repetitive and boring.

Of the 29 students initially enrolled in Cross-Age Tutoring, seven voluntarily dropped the course. Four students left after a few weeks because they disliked tutoring; two left midway through the first semester because they disliked walking to the elementary school where they tutored; and one left during the second semester because she was bored with the course. In addition, two students were dropped by the teacher during the second semester, one for poor attendance and one for poor performance. Thus, nine (31%) of the original Cross-Age Tutoring experimental students probably were dissatisfied with the course. Because most of these students were not enrolled at the end of the first semester, their attitudes were not reflected in the course evaluations discussed above.

Analyses of posttest sample. The means and standard deviations for all pretest, posttest, and follow-up measures are listed in Table 5. There was only

TABLE 4

MEANS AND STANDARD DEVIATIONS FOR COURSE EVALUATION DATA

Cross-Age Tutoring and School Store	Cross-Age Tutoring (N = 17) M	SD	School Store (N = 14) M	SD
1. How much have you liked the class meetings? (Ratings range from Liked [4] to Disliked [1]).	2.17	.95	3.36	.93
2. How does this class compare with other electives you have taken? (Ratings range from Interesting [4] to Boring [1]).	3.53	.72	3.14	.86
3. Do you think this class should be offered again? (Ratings range from Yes [2] to No [1]).	2.00	.00	1.86	.36
4. How much have you learned in this class? (Ratings range from A Lot [4] to Nothing [1]).	3.70	.46	3.79	.43
Cross-Age Tutoring Only				
5. How much did you like tutoring? (Ratings range from A Lot [4] to Not At All [1]).	3.64	.61	-	-
6. How much did the student you tutored learn from you? (Ratings range from A Lot [4] to Nothing [1]).	3.58	.57	-	-
7. Was the student you tutored happy you were there? (Ratings range from A Lot [4] to Not at all [1]).	3.76	.44	-	-
School Store Only				
8. How much do you feel your work in the school store was helpful to the students at your school? (Ratings range from A Lot [4] to Not at All [1].	-	-	3.29	.83
9. How much did the student body appreciate your work with the school store? (Ratings range from A Lot [4] to Not At All [1]).	-	-	3.50	.65

TABLE 5

MEANS AND STANDARD DEVIATIONS BY STUDY AND BY CONDITION

		Cross-Age Tutoring				School Store			
		Experimental		Control		Experimental		Control	
Measure	Test	M	SD	M	SD	M	SD	M	SD
Control Succ	Pre	1.92	.14	1.88	.16	1.86	.12	1.82	.21
	Post	1.89	.13	1.89	.14	1.86	.12	1.79	.20
	Follow-Up	1.86	.11	1.91	.13	1.87	.12	1.80	.13
Control Fail	Pre	1.78	.18	1.90	.16	1.79	.13	1.76	.29
	Post	1.72	.25	1.78	.22	1.75	.19	1.74	.25
	Follow-Up	1.86	.13	1.75	.24	1.77	.11	1.64	.29
Acad Self	Pre	2.46	.49	2.41	.34	2.38	.35	2.28	.47
	Post	2.83	.54	2.75	.53	2.81	.47	2.73	.61
	Follow-Up	2.81	.35	3.09	.45	2.92	.44	2.75	.56
Social Self	Pre	1.88	.15	1.83	.20	1.75	.22	1.85	.22
	Post	3.17	.46	3.12	.39	3.07	.42	3.04	.47
	Follow-Up	3.25	.29	3.15	.38	3.11	.41	3.18	.21
Affec Climate	Pre	2.38	.49	2.36	.24	2.37	.19	2.22	.41
	Post	2.89	.63	2.77	.39	2.84	.34	2.74	.62
	Follow-Up	2.80	.57	2.83	.39	2.96	.27	2.67	.47
Att Sch	Pre	1.82	.22	1.69	.29	1.57	.28	1.51	.35
	Post	2.73	.50	2.66	.60	2.49	.58	2.49	.78
	Follow-Up	2.78	.41	2.88	.37	2.61	.73	2.23	.73
Unex Abs	Pre	1.57	2.23	2.27	3.99	1.68	3.29	.80	.95
	Post	3.09	6.53	2.55	4.35	1.23	2.56	.67	1.02
	Follow-Up	3.36	5.51	1.27	1.42	3.91	4.06	1.80	2.78
Non-Drug Prob	Pre	.39	.89	.55	1.30	.59	1.44	.55	.83
	Post	.39	.72	.91	2.05	.50	.86	.38	.74
	Follow-Up	1.14	2.03	.45	.82	.00	.00	1.90	2.64
Peer Att Sch	Pre	2.63	.37	2.59	.40	2.53	.31	2.52	.37
	Post	2.66	.33	2.58	.35	2.48	.34	2.43	.47
	Follow-Up	2.55	.37	2.51	.44	2.56	.33	2.10	.57
GPA	Pre	3.48	.54	3.54	.75	3.58	.54	3.33	.56
	Post	3.46	.91	3.47	.74	3.49	.61	3.58	.71
	Follow-Up	3.42	.71	4.00	.53	3.73	.37	3.69	.75
Knowledge	Pre	3.05	1.46	2.44	1.47	3.23	1.19	3.30	1.69
	Post	2.71	1.27	2.95	1.40	2.68	.95	2.71	1.45
	Follow-Up	2.54	1.05	2.36	.81	2.73	1.35	3.40	1.71

Table 5 (Cont)

Measure	Test	Cross-Age Tutoring				School Store			
		Experimental		Control		Experimental		Control	
		M	SD	M	SD	M	SD	M	SD
General Drug Att	Pre	1.92	.82	1.91	.76	2.36	.85	2.38	1.23
	Post	2.12	.95	2.11	.78	2.52	.94	2.51	1.14
	Follow-Up	1.80	.69	1.88	.65	2.31	.52	2.55	.97
Soft Att	Pre	1.88	.76	1.88	.83	2.33	.99	2.21	1.04
	Post	2.19	.88	1.96	.65	2.42	.78	2.28	1.15
	Follow-Up	2.26	.55	2.03	.71	2.39	.80	2.23	.85
Hard Att	Pre	1.23	.40	1.31	.57	1.55	.85	1.51	1.00
	Post	1.53	.62	1.30	.50	1.49	.61	1.45	.97
	Follow-Up	1.11	.28	1.05	.10	1.78	1.18	1.55	.71
Soft Peer Att	Pre	2.77	1.28	3.03	1.04	2.91	.78	2.76	1.13
	Post	2.71	1.09	3.28	.99	3.33	.88	3.16	.97
	Follow-Up	3.18	.60	3.10	.78	3.18	.69	3.21	.83
Hard Peer Att	Pre	1.84	1.07	2.43	1.30	2.25	1.05	1.94	1.19
	Post	1.87	.84	2.65	1.23	2.17	.95	2.02	1.13
	Follow-Up	1.97	.85	1.71	.85	1.73	.67	2.07	1.29
Alc Benefits	Pre	1.84	.84	1.50	.48	1.80	.71	1.68	.85
	Post	1.85	.91	1.68	.59	1.87	.65	1.80	.87
	Follow-Up	1.90	.49	1.49	.59	1.71	.65	1.57	.64
Pot Benefits	Pre	1.94	1.01	1.63	.74	1.83	.70	1.81	.99
	Post	2.01	1.07	1.74	.73	1.93	.82	1.91	1.04
	Follow-Up	1.85	.70	1.38	.51	1.60	.67	1.77	1.05
Pill Benefits	Pre	1.71	.90	1.46	.53	1.72	.67	1.60	.87
	Post	1.61	.81	1.47	.55	1.50	.53	1.37	.61
	Follow-Up	1.52	.75	1.29	.51	1.38	.45	1.31	.59
Alc Costs	Pre	1.78	.66	1.68	.51	2.25	.61	2.15	.96
	Post	1.89	.76	1.86	.55	2.35	.64	2.36	.99
	Follow-Up	2.11	.69	1.70	.39	2.29	.59	2.36	.68
Pot Costs	Pre	1.86	.83	1.55	.67	1.98	.75	2.14	1.15
	Post	1.84	.93	1.74	.73	2.17	.79	2.05	1.09
	Follow-Up	1.82	.63	1.51	.45	1.97	.48	2.32	1.03
Pill Costs	Pre	1.57	.67	1.33	.49	1.79	.56	1.79	1.06
	Post	1.67	.75	1.50	.61	1.91	.69	1.79	.88
	Follow-Up	1.46	.49	1.36	.41	1.89	.40	1.80	1.00
Soft Peer Use	Pre	39.24	21.01	37.98	24.88	33.07	22.30	47.72	31.27
	Post	36.00	20.51	43.14	17.80	42.19	26.02	40.46	21.78
	Follow-Up	44.63	15.76	46.05	15.04	27.33	16.10	47.96	24.36

Table 5 (Cont)

		Cross-Age Tutoring				School Store			
		Experimental		Control		Experimental		Control	
Measure	Test	M	SD	M	SD	M	SD	M	SD
Hard Peer Use	Pre	13.83	12.48	20.97	29.63	9.80	15.64	25.61	31.20
	Post	12.04	13.81	12.97	10.27	7.80	9.38	11.27	14.30
	Follow-Up	14.30	15.10	9.20	10.09	6.06	10.27	8.77	10.47
Alcohol Involve	Pre	1.82	1.02	2.12	1.06	2.74	1.18	2.44	1.25
	Post	2.32	.98	2.47	1.04	2.66	1.00	2.79	1.30
	Follow-Up	2.48	1.00	2.22	.74	2.63	.82	3.13	1.16
Cigarette Involve	Pre	1.77	1.13	1.52	1.01	1.75	.89	1.89	1.42
	Post	1.94	1.37	1.70	.90	1.64	.71	2.08	1.31
	Follow-Up	2.13	1.44	1.51	.48	1.37	.29	1.97	1.28
Pot Involve	Pre	1.66	1.24	1.32	.80	1.65	1.21	1.87	1.57
	Post	1.86	1.29	1.74	1.36	1.77	1.03	2.32	1.68
	Follow-Up	1.34	.40	1.33	.40	1.46	.83	2.43	1.76
Inhalant Involve	Pre	1.06	.17	1.09	.22	1.20	.79	1.20	.63
	Post	1.16	.31	1.08	.21	1.11	.26	1.16	.59
	Follow-UP	1.00	.00	1.00	.01	1.06	.20	1.00	.00
Barbiturate Involve	Pre	1.02	.07	1.12	.40	1.12	.57	1.30	.76
	Post	1.17	.48	1.14	.47	1.05	.21	1.27	.74
	Follow-Up	1.27	.09	1.00	.00	1.03	.10	1.07	.14
Amphetamine Involve	Pre	1.03	.10	1.15	.54	1.20	.85	1.47	.99
	Post	1.29	.89	1.29	.74	1.08	.23	1.37	.76
	Follow-Up	1.00	.01	1.01	.02	1.12	.31	1.37	.81
Cocaine Involve	Pre	1.03	.10	1.03	.10	1.18	.85	1.29	.91
	Post	1.10	.26	1.17	.48	1.14	.30	1.40	1.07
	Follow-Up	1.00	.00	1.01	.02	1.27	.91	1.54	.86
PCP Involve	Pre	1.02	.07	1.07	.24	1.18	.85	1.17	.74
	Post	1.00	.00	1.27	.94	1.08	.25	1.05	.16
	Follow-Up	1.00	.00	1.00	.00	1.06	.20	1.23	.74
LSD Involve	Pre	1.03	.10	1.13	.40	1.14	.64	1.21	.89
	Post	1.00	.00	1.09	.36	1.09	.29	1.11	.44
	Follow-Up	1.00	.00	.00	.00	1.00	.00	1.10	.32
Heroin Involve	Pre	1.02	.07	1.08	.31	1.15	.71	1.17	.74
	Post	1.00	.00	1.06	.28	1.12	.57	1.16	.73
	Follow-Up	1.00	.00	1.00	.00	1.00	.00	1.00	.00

one significant difference on the pretest. Experimentals were less internal on locus of control for failure than controls, $t(42) = 2.43$, $p < .05$. There were no other initial differences, thus, there was strong evidence for initial equivalence of experimental and control students.

Analyses of covariance are summarized in Table 6. There were no significant differences between experimentals and controls on any variable.

Analyses of follow-up sample. There was one significant difference on the pretest for the follow-up sample. As compared to controls, experimental students perceived less favorable peer attitudes toward hard substances, t (23) = 2.79, p = .01. There was no other evidence for initial nonequivalence of experimentals and controls in this sample.

Analyses of covariance are summarized in Table 7. There were two significant differences between experimentals and controls in the follow-up of Cross-Age Tutoring. Experimental students were more internal on locus of control for failure, F (1,21) = 8.06, p = .01, but had lower grade point averages than controls, F (1,22) = 5.15, $p < .05$.

School Store

Course evaluations. Students rated the School Store course highly compared to other electives (see Table 4). They also reported that the course should be offered again, that they learned a lot, and that the practical experience was enjoyable and helpful to others. Students in School Store liked their daily class meetings and liked working in the store.

Analyses of posttest sample. One significant difference was found on the pretest measures. Experimentals perceived less peer use of hard substances,

TABLE 6

ANALYSIS OF COVARIANCE FOR POSTTEST SAMPLE BY STUDY

	Cross-Age Tutoring		School Store	
Measure	B	F	B	F
Control Succ	.11	<1	.12	1.98
Control Fail	.64	<1	.18	<1
Acad Self	.76	<1	.39	<1
Social Self	1.59	<1	.83	<1
Affec Climate	.80	<1	.79	<1
Att Sch	.84	<1	1.43	<1
Unex Abs	.53	<1	.40	<1
Peer Att Sch	.26	<1	.21	<1
GPA	.69	<1	.49	2.13
Knowledge	.20	<1	.32	<1
General Drug Att	.65	<1	.79	<1
Soft Att	.42	<1	.70	<1
Hard Att	.20	<1	.71	<1
Soft Peer Att	.51	2.45	.59	<1
Hard Peer Att	.47	3.86	.57	<1
Alc Benefits	.59	<1	.61	<1
Pot Benefits	.58	<1	.75	<1
Pill Benefits	.41	<1	.47	<1
Alc Costs	.46	<1	.66	<1
Pot Costs	.63	<1	.67	<1
Pill Costs	.30	<1	.57	<1
Soft Peer Use	.20	<1	.48	1.85
Hard Peer Use	-.03	<1	.19	<1
Alcohol Involve	.58	1.15	.76	3.41
Cigarette Involve	.69	1.73	.76	4.10*
Pot Involve	.83	1.71	.73	2.27

NOTE: B refers to the unstandardized regression coefficient of the posttest on its corresponding pretest. The error degrees of freedom range from 36 to 42 for Cross-Age Tutoring and from 35 to 39 for School Store.

* = $p \leq .05$

TABLE 7

ANALYSIS OF COVARIANCE FOR FOLLOW-UP SAMPLE BY STUDY

	Cross-Age Tutoring		School Store	
Measure	B	F	B	F
Control Succ	.41	2.05	.35	<1
Control Fail	.44	8.06**	.28	1.57
Acad Self	.15	2.64	.81	1.36
Social Self	.99	<1	.78	<1
Affec Climate	.72	<1	.68	<1
Att Sch	.33	<1	.91	<1
Unex Abs	-.01	1.42	.59	<1
Non-Drug Prob	.94	<1	2.14	1.65
Peer Att Sch	.23	<1	1.06	4.81*
GPA	.41	5.15*	.44	<1
Knowledge	.05	<1	.30	1.02
General Drug Att	.06	<1	.39	<1
Soft Att	.21	<1	.15	<1
Hard Att	-.03	<1	.07	<1
Soft Peer Att	-.03	<1	.33	<1
Hard Peer Att	.07	1.23	.45	2.61
Alc Benefits	.35	1.53	.27	<1
Pot Benefits	.26	2.20	.66	<1
Pill Benefits	.52	<1	.03	<1
Alc Costs	.20	2.93	.33	<1
Pot Costs	.01	1.77	.36	<1
Pill Costs	.28	<1	.19	<1
Soft Peer Use	.14	<1	.07	<1
Hard Peer Use	.08	1.41	.05	1.71
Alcohol Involve	.54	1.42	.35	2.65
Cigarette Involve	.73	1.88	.37	2.02
Pot Involve	.00	<1	.21	2.49

NOTE: B refers to the unstandardized regression coefficient of the posttest on the corresponding pretest. The error degrees of freedom range from 18 to 22 for Cross-Age Tutoring and from 14 to 18 for School Store.

* = $p < .05$
** = $p \leq .01$

t (38) = 2.06, p <.05. Therefore, the evidence supports the initial equivalence of experimental and control students.

Analyses of covariance are summarized in Table 6. There were no effects on the hypothesized variables. However, there was an effect on one drug-related variable. Experimental students had less cigarette involvement, F (1,39) = 4.10, p = .05, than control students at posttest.

Analyses of follow-up sample. Two significant differences were found on the pretest measures for the follow-up sample. Experimental students had more favorable attitudes toward the teaching climate, t (19) = 2.15, p <.05, and had fewer discipline problems than controls, t (19) = 2.35, p <.05. Thus, there was little evidence of initial nonequivalence of experimental and control students.

Analyses of covariance for the follow-up sample are summarized in Table 7. There were two significant differences; experimental students perceived more positive peer attitudes toward school than controls, F (1,16) = 4.81, p <.05, and experimentals perceived less peer use of soft substances than controls, F (1,17) = 4.51, p <.05.

Discussion

The effects of participation in Cross-Age Tutoring or School Store were negligible. There was little evidence for enhancement of student attitudes toward themselves or school as originally anticipated. Although a few significant differences were found at posttest or follow-up, these were not hypothesized and were most likely due to Type I error. Nonetheless, experimental students reportedly enjoyed the courses and felt that they contributed valuable services to others.

Several limitations of the present study may explain the disappointing results. Students spent only about 8% of their total school time in the courses over a semester, with about 20 hours in field work. With this level of treatment intensity it may be unreasonable to expect substantial changes in school-related variables.

Furthermore, certain aspects of the courses may have limited the students' involvement in their roles as service providers. For example, in Cross-Age Tutoring, students complained that the training they received was boring and repetitive. Perhaps the training was viewed as peripheral to successful tutoring because it emphasized interpersonal skills rather than teaching skills. Fitz-Gibbon (Note 3) found that students perceived tutoring as a more serious and prestigious task when their training was primarily oriented toward cognitive instruction and not social skills improvement.

The curricula for both courses appear not to have been challenging. It has been suggested that self-satisfaction or pride can only develop through confronting and mastering challenges (Szymanski, 1976). To the extent that students felt unchallenged, they had no reason to take pride in themselves. This could explain lack of positive findings for self-concept or locus of control.

Finally, although changes in drug-related variables were not predicted, such changes are the long-term goal of any alternatives strategy. Within the alternatives model, service opportunities were designed to compete with the current needs, wants and time of the individual to use drugs by developing sustaining skills and interests. However, for the present age group, the skills developed in tutoring or operating the store probably have limited application beyond the courses. Additionally, because service opportunities were part of the regular curriculum there is no basis to find the experiences they afforded as incompatible with drug use inasmuch as most drug use takes place outside of school. The efficacy of incorporating alternatives or service opportunity prevention strategies within the school curriculum must be called into question in light of these observations.

Reference Notes

1. Schaps, E. and Slimmon, L. *Balancing Head and Heart: Sensible Ideas for the Prevention of Drug and Alcohol Abuse--Book 2: Eleven Strategies,* Prevention Materials Institute Press, 1975.

2. Anania, J., Easton, J., & Sugarman, J. Annotated Bibliography. In Bloom, S., *Peer and Cross-Age Tutoring in the Schools,* National Institute of Education, 1976.

3. Fitz-Gibbon, C.T. An Examination of the Literature on Tutoring, Center for the Study of Evaluation, University of California at Los Angeles, 1978.

4. Napa Project, Process Documentation--Making and Managing Money, 1979-80 School Year, Prevention Branch, National Institute on Drug Abuse, 1980.

5. Napa Project, Process Documentation--Cross-Age Tutoring, 1979-80 School Year, Prevention Branch, National Institute on Drug Abuse, 1980.

6. Stenner, A. & Katzenmeyer, W. *Technical Manual and User's Guide: Self Observation Scales,* NTS Research Corporation, Durham, North Carolina, undated.

7. Moskowitz, J., Condon, J., Brewer, M., Schaps, E. & Malvin, J. The Napa Project: Scaling of Student Self-Report Instruments. Prevention Branch, National Institute on Drug Abuse, 1979.

8. Moskowitz, J., Schaeffer, G., Condon, J., Schaps, E. & Malvin, J. Psychometric Properties of the "Drug and Alcohol Survey." Prevention Branch, National Institute on Drug Abuse, 1981.

References

Szymanski, G. Dedication through teacher education, *Journal of Teacher Education,* 1976, *27,* 164-165.